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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-----------------------------------|------------------|
| 10/635,822 | 08/07/2003 | Katayoon Dehesh | 16518.131 | 1356 |
| 28381 | 7590 | 11/03/2006 | | |
| ARNOLD & PORTER LLP ATTN: IP DOCKETING DEPT. 555 TWELFTH STREET, N.W. WASHINGTON, DC 20004-1206 | | | EXAMINER MCELWAIN, ELIZABETH F | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1638 | |

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--|---|--|
| Office Action Summary | Application No. 10/635,822 | Applicant(s) DEHESH, KATAYOON | |
| | Examiner Elizabeth F. McElwain | Art Unit 1638 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-43 and 45-112 is/are pending in the application.
- 4a) Of the above claim(s) 39-43 and 54-111 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 45-50 and 112 is/are rejected.
- 7) ☒ Claim(s) 51-53 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>12/4/03;3/26/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

The Amendment filed August 14, 2006 has been entered.

Claim 112 is currently amended.

Election/Restrictions

1. Applicant's election with traverse of Group VI, claims 45-53 and 112 in the reply filed on August 14, 2006 is acknowledged. The traversal is on the ground(s) that Groups VI-XI are in the same class and subclass and would not require an undue burden to search. This is not found persuasive because Group VI is drawn to a method of increasing the amount of medium-chain fatty acids in a plant seed, while Groups VII-XI are drawn to modifying the composition of fatty acids in a plant, and it would require an undue burden to search and examine all of these methods.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 45-50 and 112 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knauf et al (US Patent 6,426,447).

The claims are drawn to a method for producing medium-chain fatty acids in transgenic plant seeds by introducing heterologous coding sequences for a plant synthase factor protein and one or more medium-chain thioesterase proteins.

Knauf et al teach transformation of a plant with a synthase factor protein and transformation of a plant with a thioesterase coding sequence (see columns 15-16, 20-23 and 31-32, for example). Knauf et al also teach a coding sequences for thioesterases from *Cuphea hookeriana*, and *Umbellularia californica* (see column 16, lines 10-16, for example). In addition, Knauf et al teach that expression of more than one fatty acid modifying enzyme will be desired for some applications (column 6, lines 58-60).

Knauf et al do not specifically teach a plant transformed with both the synthase factor protein coding sequence and at least one thioesterase coding sequence. In addition, Knauf et al do not specifically teach coding sequences for a *Cuphea* KAS factor A protein or a *Garcinia mangostana* FatA1 thioesterase or a *Cuphea pulcherrima* FatB1 thioesterase.

Given the recognition of those of ordinary skill in the art of the value of transforming a plant with more than one fatty acid modifying enzyme coding sequence and including synthase factor proteins and thioesterases for the purpose of increasing levels of medium-chain fatty acids in a plant seed, as taught by Knauf et al, it would have been obvious to one of ordinary skill in the art to use the sequences and methods taught by Knauf et al to produce a plant transformed with coding sequence for both a factor synthase protein and a thioesterase for the purpose of increasing levels of medium-chain fatty acids. Thus the claimed invention would have been *prima facie* obvious as a whole at the time it was made, especially in the absence of evidence to the contrary.

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Claims 50-53 are objected to for depending on a rejected base claim.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth F. McElwain whose telephone number is (571) 272-0802. The examiner can normally be reached on increased flex time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Elizabeth F. McElwain, Ph.D.
Primary Examiner
Art Unit 1638

EFM